Gabriel **Orlanski**

 gabeorlanski.github.io | gabeorlanski | gabriel-orlanski | Gabriel Orlanski

Education

New York University   *New York, New York*
MS in Computer Science   *September 2021 - May 2023*
- **GPA:** 3.8/4.0

Rensselaer Polytechnic Institute   *Troy, New York*
BS in Computer Science with a Minor in Quantitative Modeling in Economics   *August 2017 - May 2021*
- **GPA:** 3.2
- **Awards:** Dean's Honor List Fall 2019 & 2020, Spring 2021

Publications

WORKSHOP PAPERS

Reading StackOverflow Encourages Cheating: Adding Question Text Improves Extractive Code Generation
Gabriel Orlanski, Alex Gittens , *Proceedings of the 1st Workshop on Natural Language Processing for Programming*, 2021

Experience

Graduate Research Assistant   *January 2022 - Present*
New York University   *New York, New York*
- Advisor: He He

NLP Research Intern   *June 2021 - December 2021*
Merlin Labs   *New York, New York*
- Researched how to generate semantic instructions from Air Traffic Control transcripts with neural semantic parsing models.
- Built a transformer sequence to sequence model that attained nearly 4x better performance compared to the baseline.
- Found improvements of over 14% with a novel method to incorporate context from prior conversation utterances.
- Designed a hierarchical representation for the instructions that improved overall accuracy by over 70%.
- Implemented a pipeline to track over 1,200 experiments and manage version control for over 150 models.

Undergraduate Research Assistant   *January 2021 - May 2021*
Rensselaer Polytechnic Institute - Advisor: Alex Gittens   *Troy, New York*
- Advisor: Alex Gittens
- Researched how to improve code generation techniques for answering StackOverflow questions.
- Built a transformer based model that used question data to generate code, beating the previous state-of-the-art results by 10%.
- Designed experiments that demonstrated that denoising transformers perform 40% better than their translational counterparts.
- Reproduced results from multiple papers to serve as baselines.
- Pressented paper at the NLP4Prog workshop at ACL-IJCNLP 2021.

Undergraduate Research Assistant   *September 2019 - November 2020*
RPI - The Lally School of Management   *Troy, New York*
- Advisor: Thomas Shohfi
- Researched the use of sentiment in financial reports and conference calls to detect algorithmic trading of an equity.
- Found that less than 10% of the occurring negative sentiment had significance with respect to the volume.
- Tripled the amount of usable data for over 25,000 financial filings by implementing NLP algorithms to extract salient information.
- Designed and built an end-to-end program that mines the SEC Filings for over 2,000 firms.
- Created a Python pipeline to accurately parse more than 10 million unstructured Analyst Earnings Reports in only 10% of the total run-time.

Undergraduate Research Assistant
RPI - Department of Computer Science

May 2019 - September 2019
Troy, New York

- Advisor: Heng Ji
- Researched Author Disambiguation for the Association of Computational Linguistics' new anthology.
- Designed a model that achieved over 97% accuracy classifying 1 million unique authors.
- Created a python program to parse over 12,000 academic papers and extract information.
- Engineered metadata features to improve the model's performance by over 50%.
- Reduced the program's runtime from days to hours by designing an algorithm to eliminate impossible author pairs.

Projects

Zero-Shot Cross Task Prompting

github.com/gabeorlanski/zero-shot-cross-task

- Term Project for CSCI-GA 2590: Natural Language Processing.
- Analyzed how natural language prompts perform when used with tasks they were not designed for.
- Found that specific attributes in a natural language prompt can improve performance by up to 60%.
- Built a framework and pipeline to run over 2000 experiments with large-scale neural language models.

AllenNLP

github.com/allenai/allennlp

- Top 100 contributor to the AllenNLP research library.
- In the process of creating an improved evaluation pipeline for better analysis of deep learning models.
- Added new datasets from papers for ease of use in research.
- Improved documentation for PyTorch optimization modules.
- Created examples of experiment configurations to address the library's steep learning curve.

Adversarial Robustness Toolkit

github.com/Trusted-AI/adversarial-robustness-toolbox

- Lead a group of students contributing to the open-source project Adversarial Robustness Toolkit for deep learning models.
- Worked closely with members of the IBM team maintaining the project.
- Held tutorials on machine learning and adversarial attack concepts for fellow teammates.
- Implemented a new flickering video classification attack and created demonstrations to test its efficacy.

Professional Service

Deep Learning For Code Workshop

dl4c.github.io

- Co-Organizer for the ICLR 2022 Workshop Deep Learning For Code.
- Handling logistics for the invited speakers and program committee.
- Built website and social media presence for the workshop to increase its visibility.

Extracurricular Activity

Chief Operating Officer
Roebling Investment Club

January 2019 - May 2020
Troy, New York

- Helped lead and run a club dedicated to the fundamentals of equity investment.

Skills

Programming	Python, Tensorflow, PyTorch, C, C++, SQL, Java, Excel VBA, Javascript, Git, MongoDB, Postgres, MySQL
Computer Science	Natural Language Processing, Machine Learning, Data Structures, Algorithms, Software Design, Data Engineering, ETL